METHOD FOR LOCALLY FORMING DIFFERENT BAND GAP IN QUANTUM WELL BY DIELECTRIC-SEMICONDUCTOR COMPOSITE COVER LAYER

Publication number: KR20010036949 (A)
Publication date: 2001-05-07
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Classification:
- international: ***H01L21/18;*** **H01L21/02;** (IPC1-7): H01L21/18
- European:
Application number: KR19990044158 19991012
Priority number(s): KR19990044158 19991012

Abstract of **KR 20010036949 (A)**

PURPOSE: A method for locally forming a different band gap in a quantum well by a dielectric-semiconductor composite cover layer is provided to regulate a degree of disorder of the quantum well. CONSTITUTION: The method begins with growing an InGaAs/InGaAsP quantum well substrate by a chemical beam epitaxy technique. Next, a dielectric thin layer made of such as SiO2 or SiNx is formed as a cover layer on the quantum well substrate by a plasma-enhanced chemical deposition technique. After a heat treatment step is carried out at a temperature of 600 - 800[deg.]C for 4 - 16 minutes, the dielectric thin layer is removed. In addition, InP, InGaAs or InGaAsP is used as a semiconductor cover layer.